

REMARKS**Summary of the Office Action**

In the Office Action, claims 1-2 and 4-9 were rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over *Hikata* (JP 11-106234) in view of *Sugimoto et al.* (JP 2000-048931) hereinafter (“*Sugimoto*”). Claim 7 was objected to for a minor informality.

Summary of the Response to the Office Action

Applicant amends claim 1 and 2 and the preamble of claim 7. Accordingly, claims 1-2 and 4-9 are pending for further consideration.

All Subject Matter Complies with 35 U.S.C. § 103(a)

Claims 1-2 and 4-9 were rejected under 35 U.S.C. § 102(e) as allegedly being unpatentable over *Hikata* in view of *Sugimoto*. These rejections are respectfully traversed for at least the following reasons.

To establish a *prima facie* case of obviousness, three basic criteria must be met (see *MPEP* §§ 2142-2143). First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art references must teach or suggest all the claim limitations. All three criteria must be met to establish obviousness.

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).” See *MPEP* § 2143.01. The Office Action does not provide any citation to the references of record that shows the desirability of

combining. Further, as discussed below, the combination of references necessarily includes features that teach away from the present invention. The mere assertion that *Hikata* could be combined with *Sugimoto* is not sufficient by itself to establish *prima facie* obviousness. Therefore, it is respectfully submitted that the Office Action has not met the second prong of *prima facie* obviousness.

Neither *Hikata* nor *Sugimoto* teaches nor suggests a glaze layer that has “11 to 15 mol% in total of at least one of alkaline metal components of Na, K, and Li in terms of Na₂O, K₂O, and Li₂O, respectively,” as recited in independent claims 1 and 2. The Office Action alleges that this feature is found in *Hikata*. See page 3, lines 6-7 of the Office Action. However, *Hikata* teaches 1-10 mol% of Li₂O + Na₂O and K₂O. This teaches away from the present invention. The specification for the present invention states that if the total amount of alkali metals is less than 10 mol%, the softening of the glaze increases and may become impossible to bake. See the specification at page 7, lines 3-6. Thus, *Hikata*’s range (1-10 mol%) is inapposite to that claimed in the present invention. The present invention, as recited in claims 1 and 2, calls for 11 to 15 mol%. In other words, 11 mol% or greater.

Further, if the Office Action relies upon the teachings of *Sugimoto* in an attempt to cure the above-mentioned deficiencies of *Hikata*, *Sugimoto* also teaches away from the present invention. *Sugimoto* shows a spark plug with a glaze layer that contains alkali metals. However, *Sugimoto* teaches that if one of the compositions of Ni, Li, or K exceeds 9%, the coefficient of linear expansion of the cover coat (glaze) will become too large and will produce defects in the glaze layer, such as cracking. See paragraph 0013 of *Sugimoto et al.* Thus, one skilled in the art would not combine *Sugimoto* with *Hikata* to arrive at the present invention.

In view of the above arguments, Applicant respectfully requests that the rejection of independent claim 1 under 35 U.S.C. § 103 be withdrawn. Additionally, claims 2 and 4-9 which depend from independent claim 1, are allowable at least because their base claim is allowable, as well as for the additional features recited therein.

CONCLUSION

In view of the foregoing, Applicant respectfully requests reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the Applicant's undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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